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ABSTRACT

This guide is the third of three documents that make up a Professional Development Package for Educational Systems Design. It is intended for use by members of a core design team and assumes that the school district and community have committed themselves to a systems design process, and that a design leadership group representing the school district and community has been formally established. Intended for use during a 5-day workshop for a core design team, the guide is organized around five basic design phases and provides participants with tools and methods. The phases include: (1) analyzing the current system in terms of its adequacy and developing a systemic description; (2) exploring design options and creating a guiding image for the design process; (3) designing the ideal system; (4) designing the necessary organization and management system; and (5) developing an implementation plan. (22 references) (MLF)

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A Trainer's Guide for Educational Systems Designers

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THE TRANSFORMATION OF EDUCATION BY DESIGN

A Trainer's Guide for
Educational Systems Designers

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A TRAINER'S GUIDE FOR EDUCATIONAL SYSTEMS DESIGNERS

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PREFACE

This guide is the third of three documents that make up a Professional Development Package for Educational Systems Design. Together, the documents constitute an integrated package designed to help the intended audiences (educators and others) accomplish specific purposes relative to a communitywide systems design effort. Some overlap in audiences is expected since everyone involved in the educational design effort will have read the orientation guide as a first activity. The three documents are described below.

1. THE TRANSFORMATION OF EDUCATION: BY DESIGN: An Orientation Guide for Educational Decision Makers

Audience: Policy makers, community leaders, public and private sector leadership, school board members, professional educators in public and higher education, parents, students, and others concerned with education and human development.

Purposes:

- To explore the implications for education of the rapidly changing societal environment and advances in knowledge about learning and human development

- To develop among educational stakeholders an appreciation of the power of design for creating more appropriate systems of learning and human development

- To help stakeholders to explore and reflect upon their responsibilities for — and the specific contributions they can make to — the redesign of education

How Used: The orientation guide is ideally used in a one-day study and discussion session for educational and community leadership. Participants should have read the manual prior to the session.

How Organized: The guide is designed to provide readers with a basic understanding of educational systems design. It provides an overview of the process as it might take place within a school district and community. It is also intended to convince readers and orientation session participants of the importance of educational design as the needed strategy for reform.

2. THE TRANSFORMATION OF EDUCATION BY DESIGN: A Leadership Guide for Educational Decision Makers

Audience: A leadership group empowered to provide leadership, policy direction, and support for a design effort. This group may be organized by (or consist of) the educational leadership in a community in cooperation with the school board and other key community leaders.

Purposes:

- To develop further knowledge about the process and requirements for educational design
- To develop awareness and appreciation of the roles and organizational capabilities and capacities necessary for a design process
- To assist the leadership to explore the various dimensions and options for shaping a design inquiry process and for establishing general parameters for the designers

How Used: This guide is to be used in a three-day workshop for a leadership group. Participants will extend their knowledge and understanding of design by exploring and developing plans for their own leadership roles for guiding, providing support, and mobilizing the community in an educational systems design effort.

How Organized: The guide is organized around key concepts and requirements that leadership must address to initiate and sustain an effective design inquiry process.

3. TRANSFORMATION OF EDUCATION BY DESIGN: A Trainer's Guide for Educational Systems Designers

Audience: This guide is intended for the core design team. The team is established by the leadership group and is responsible for conducting the design effort. Members of this team will be, for the most part, educators and others who will have responsibility for the eventual implementation of the new design. They are user-designers.

Purposes:

- To develop needed capability (knowledge and skills) of designers to engage in a design process

- To assist designers to develop a detailed plan that specifies the steps, tasks, needed resources, arrangements, etc., necessary to conduct a systems design effort in the school district and community

How Used: The most effective use of the guide will be with intact teams of persons from communities who have been designated as members of the core design team and who are able to meet with one or more trainers. Participants address design questions and issues in the context of their own work environment. Teams will participate in a five-day intensive training workshop aimed at developing the readiness to initiate their own design effort.

How Organized: This guide is organized around the full set of design process tasks and activities. It gives minimal information about design, focusing instead on learning and application exercises, tasks, implementation guidelines, and additional resources for the conceptual content concerning design (for example, *Systems Design of Education: A Journey to Create the Future* by Bela H. Banathy, Educational Technology Publications, In Press).

INTRODUCTION

This guide is the third document in the package of materials concerned entitled The Transformation of Education By Design. It is intended for use by members of a core design team and assumes (1) their earlier participation in an orientation about educational systems design and a workshop for design leadership, (2) that the school district and community have committed themselves to a systems design process, and (3) that a design leadership group representing the school district and community has been formally established.

This guide is intended for use during a five-day workshop for a core design team. The team might include 9 to 11 persons who represent important segments of the school district and community. The specific membership composition is always determined locally. In addition to representativeness, it is crucial that members are selected for their interest and commitment to systems design, their knowledge and skill for both the content and process of systems design, and the status they hold with colleagues and other groups. The core design team members may also be required to provide leadership to task force groups. Such groups may be formed to provide input to the core design team when additional expertise is needed or to review emerging design ideas and configurations. The core design team receives their guidance and support from the design leadership group.

This guide will enable the members of the core design team to learn about and practice specific design activities and become familiar with learning resources and reference materials that will be useful to them. The guide is organized around five basic design phases and provides participants with tools and methods by which their design tasks can be accomplished. The phases include (1) Analyzing the current system in terms of its adequacy and developing a systemic description; (2) Exploring design options and creating a guiding image for the design process; (3) Designing the ideal system; (4) Designing the necessary organization and management system; and (5) Developing an implementation plan.

The final activity of the workshop, developing a plan for implementing the design process, will identify and describe the various activities, schedules, responsibilities, and resources participants will need to launch design efforts in their communities.

The five-day workshop constitutes Stage One of a two-stage design learning program and is concerned with preparation. Stage Two takes place within the community and is defined by the efforts of the core design team and others to continue their learning and development.

Resources to support the workshops are introduced in the reference section. In the text, references are coded by number.

PROGRAM OUTLINE

PHASE ONE: ANALYSIS

Activity One: Understanding the Current Educational Predicament

In a conversational style, this activity enables participants to (1) explain their understanding of the inadequacy of the improvement/restructuring efforts of the last decade; (2) answer the question of why we are in this "mess" and discuss the barriers that have locked us into failed renewal programs; and (3) formulate a consensus as to what we can do about the predicament.

Resources for this activity include: the two guides, selected readings from (13) and (10), selected chapters of (20), and chapter one of (6). These readings should be completed by participants prior to the program.

Activity Two: Describing and Assessing the Existing System

Participants are introduced to the systems methodology for providing a systems description or "model" of an organization such as an educational system. They will be introduced to a resource which describes the use of the methodology. A guided exploration will provide limited experience to participants in describing and assessing the adequacy of the current system. They will receive guidance on how to use the method as they engage in the analysis of their system in the back-home situation. This experience leads into a review of a brief statement on a systems view of education, followed by a guided discussion.

Primary resources: (3) and chapter two of (6).

Activity Three: Developing A Systemic Representation of the Problem Situation in the Existing System

Part One: Developing A Systemic Description of Problems

In an idea-writing setting, participants generate a description of problem situations they have confronted in the context of the existing educational systems in their community. This task is followed by listing the problems on newsprint, clarifying them, and exploring the interdependence of problems. A discussion should lead to an understanding that we cannot address problems in a piecemeal fashion; we are confronted with a system of problems, and only (the design of) a system that addresses all aspects of the problem situation will be adequate.

Part Two: Refocus on Systemic Principles

The conversation will refocus on systemic principles that guide thinking about the design of educational systems. An outline is developed to guide participants in introducing this activity in their back-home situation.

Resources include: the findings (of the assessment) developed during Activity Two, a description of the idea-writing and sharing method, sample descriptions of earlier "problem situation representation" activities, and (6).

PROGRAM SCHEDULE FOR PHASE ONE

The Analysis Phase could be scheduled as a one-day activity, distributed in time as follows:

- **Activity One**: 8:30 - 11:45 am, with mid-morning break, followed by lunch.
- **Activity Two**: 1:00 - 4:00 pm, followed by a short break.
- **Activity Three**: In two sessions, as outlined above. Dinner is scheduled between the two sessions.
- **Evening Activity**: "Fireside" conversation that reviews the accomplishments of the day and looks ahead to the days that will follow.

PHASE TWO: EXPLORING DESIGN OPTIONS AND FORMULATING A GUIDING IMAGE

Activity One: Exploring Design Options and Setting Boundaries for the Design Inquiry

Using the three-dimensional Design Framework introduced in the two preceding guides, participants work with the information developed by the leadership group (which used the guide to set boundaries) and respond to three assignments as follows:

- The SCOPE OF INQUIRY assignment provides a limited set of examples of the characteristics of the post-industrial/ information society. Participants engage in idea writing and presentation to explore the implications of these characteristics for (1) the societal functions of education and (2) the new learning agenda.

- The FOCUS OF THE INQUIRY assignment introduces the four options of organizing education and enables participants to explore the implications of these four options. Part of this assignment is to review an example of specifications of the option that organizes education at the learning experience level.

- The RELATIONSHIP WITH OTHER SYSTEMS assignment introduces a portrayal of all systems in a community that might provide opportunities and resources for learning and human development. Participants explore linkage-coordination or integration with those systems and their implications for design.

Resources: In addition to the assignment papers, participants are introduced to (4, 5, 6, 8, 9, 14, 15, 17, 18, 22).

At the end of this activity, participants receive guidance for applying these activities in their back-home design situation.

Activity Two: Formulating Core Values and Core Ideas

This assignment will be more than an introduction to this design strategy. It asks the group to articulate their core values relevant to education and their core ideas about the kind of new educational design we should have.

Resource sources: the findings of Activity One and (8, 16, 17).

Participants will follow the idea-writing and recording method to forge a consensus within the group. At the end of this activity, participants discuss approaches they might use in their back-home design situation.

Activity Three: Creating An Image

This activity starts by reviewing a framework for creating an image. The framework provides categories derived from the materials presented in the assignments on exploring design options. Participants are directed to review findings of the two previous activities and individually write out their ideas using the framework. They record their ideas on newsprint and generate consensus for a shared image. Once completed, an example will be provided to lead them into further discussion (from 6).

PROGRAM SCHEDULING FOR PHASE TWO

This phase should be scheduled as the program of the second day, distributed in time as follows:

- **Activity One**: 8:30 am - 2:00 pm, with mid-morning and lunch break.
- **Activity Two**: 2:00 pm - 5:30 pm, with short break at 3:00 pm.
- **Activity Three**: After-dinner session.

PHASE THREE: DESIGNING THE IDEAL SYSTEM

Activity One: Design: A Decision-Oriented Disciplined Inquiry

This activity (1) refocuses on a comprehensive definition and characterization of design, (2) explores organizing perspectives that will guide the design inquiry, and (3) considers the choice of the type of system the community wishes to design.

Participants engage in a conversation leading to a consensus definition of design as they understand it. Aiding them in this task is a list of definitions and characterizations. They will also receive a list of reference materials that they can consult in their continuing design learning. They will return to earlier resource materials in the Leadership Guide for Educational Decision Makers and discuss distinctions between different pairs of definitions related to design.

A handout will guide participants in discussing organizing perspectives they will use to formulate their own perspectives. They will prepare a comprehensive statement (of organizing perspectives) that they intend to introduce in their back-home design program.

The next assignment is introduced by a description or characterization of various types of human activity systems, ranging from rigidly controlled to purpose seeking. The task is to gain a good understanding of these different types of organization and to discuss the implications of selecting a certain type of system to be designed. A discussion follows to clarify the implication of this type selection for choosing an appropriate design approach and method. Resource materials: (5, 6, 11).

Activity Two: Core Definition and Systems Characteristics

During this activity participants consider an approach and specific design tasks that will enable them to begin designing the ideal system in the back-home situation ,

based on the image that will be collectively developed by the design community. This activity unfolds as the design team considers (1) the framing of a mission statement, (2) the selection of the purposes of the system, and (3) the definition of systems characteristics.

First, designers begin to grapple with the issue, What is the system about? They develop a set of questions that will help them to initiate the design of the ideal system. A set of sample questions are provided to the group, which they will consider, add to, or modify, recording some of their answers on newsprint. They will be guided in framing a tentative mission statement that will be critiqued and discussed at the conclusion of this assignment.

Second, they transform their mission statement into a more detailed statement of purpose that provides them, even if tentatively, with a sense of direction in working on their continuing assignments. (During the actual design program this statement will be a functional elaboration and interpretation of the image the design community will create.) In this assignment, participants begin to interpret and elaborate the image they created during Phase Two.

The last task of this activity is to transform the mission statement and the statement of purpose into systems characteristics. A set of questions will be provided to participants which they will work with, modify, clarify, and begin to answer in order to acquire experience formulating systems characteristics. Once formulated, these will be critiqued and discussed. Resources: (1, 6, 11).

Activity Three: Designing the Ideal System of Functions

This activity leads us into the design of the first model of the new system, the model of the system of functions. The activity has three tasks: (1) setting boundaries for the new system, (2) designing a system of functions, and (3) testing the system of functions.

The first task helps participants understand the process of setting the boundaries of the new system. This is particularly important if on the relationship dimension (of the Design Framework) consideration is given to coordination or integration. Participants will begin to establish boundaries for a system that is able to carry out the necessary functions and attend to the characteristics and that will include all those systems that are identified as contributing to and part of the new system.

The second assignment aims to develop in the participants an appreciation of the crucial tasks of designing the system of functions. Questions that guide this assignment are provided to each member of the group. Members will formulate their specific

responses to those questions during an idea-writing session, report and record their ideas, and critique and discuss them. They will then formulate a collective set of functions.

The collective set of functions they design will now be tested by exploring its relevance to and adequacy for the mission statement, to the statement of purposes, and the systems characteristics. Resources: (1, 6, 11, 16).

PROGRAM SCHEDULING FOR PHASE THREE

This phase should be scheduled as the third full-day program of the workshop, distributed in time as follows:

- **Activity One**: 8:30 am - 11:45 am, with mid-morning break.
- **Activity Two**: 1:30 pm - 4:00 pm, with a short break.
- **Activity Three**: 4:15 pm - 5:45 pm and following dinner until 8:00 pm.
- **Evening Activity**: Fireside conversation that reviews the day's activity and looks ahead for the next two days.

PHASE FOUR: DESIGNING THE OPERATING SYSTEM

This phase includes four activities: (1) designing the system that guides and manages the accomplishment of the functions as portrayed in the ideal system of functions, (2) designing the organization that carries out those functions, (3) formulating a comprehensive systems description of the new system, and (4) testing the overall design.

Activity One: Designing the Management System

The question that drives this activity is, What system will have the organizational capacity and staff capability to guide and manage the new educational system and ensure that the functions will be carried out as specified in the model of the system of functions? Participants will address this question by working with a set of exploratory questions and a handout provided to them individually. This assignment is truly exploratory in nature. It aims to convey (only) an impression of what design tasks will have to be completed during the design program. Following a brief period of idea writing, the group discusses their findings and prepares a report, which will be critiqued. A list of resources is

introduced which are recommended for use during the continuing design learning and the design program. Resources: (1, 6, 11).

Activity Two: Designing the Educational Organization

This activity is similar in nature to Activity One. The question that drives this activity is, What kind of organization will have the organizational capacity and staff capability to carry out the activities as specified in the systems model of functions? Participants will receive a set of questions that will convey to them the kind of design tasks that they have to address in the back-home design program. Following an idea-writing task, they will compare their ideas and develop a report of their findings. The report will be critiqued and discussed. A list of resources will be made available for continuing design learning and design application. Resources: (1, 6, 11, 21).

Activity Three: Preparing A Comprehensive Description of the New System

The design is completed. The task is now to synthesize the products of phases two to four into a comprehensive description or model of the new system. A guided discussion will lead participants to understand the use of the three Systems Lenses introduced during the Analysis Phase to portray the new system. Resources will be provided that participants can use in their back-home setting for continuing design learning and eventually in the design of their new system. Resources: (3, 11).

Activity Four: Testing the New System

This activity aims to develop in participants an appreciation of the perspectives, instruments, sets of questions, and real-world "micro-testing" that are appropriate for evaluating a model of a system that has been designed. Resources will be introduced that team members can use in their back-home design program. Resources: (6, 11).

PROGRAM SCHEDULE FOR PHASE FOUR

- **Activity One**: Morning session, with a mid-morning break.
- **Activity Two**: 1:00 pm - 4:00 pm, with a mid-afternoon break.
- **Activity Three**: 4:15 pm until dinner.
- **Activity Four**: After dinner.

PHASE FIVE: DEVELOPING AN IMPLEMENTATION PROGRAM

This phase serves only as an orientation to activities that follow the design program. The first activity is substantive in that it develops a sensitivity in the team for barriers that block many people from engaging in design or changing their view of education and that keep them from developing the willingness to "jump out" from their existing system. In a workshop setting, this activity introduces four styles of working with change and leads participants to reflect on their styles and the style that is most conducive to readiness to engage in design. Resources: (2, 6, 12, 19).

The rest of Phase Five orients participants to strategies that follow design, including those of systems development, systems implementation and institutionalization, and systems management.

PROGRAM SCHEDULE FOR PHASE FIVE

- **Activity One**: Morning schedule.
- **Activity Two**: Following lunch, a general discussion will cover questions prepared by students to further explore chosen topics, next steps, the Stage Two Program, and an evaluation of the week's program.

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